Remarks

Claims 43-79 have been canceled without prejudice and with the understanding that Applicants may pursue the subject matter encompassed by the canceled claims in a future continuation application. Claims 80-114 have been amended to place the claims into a format that better conforms with standard U.S. patent prosecution practice. No new matter has been introduced by any of the amendments. After entry of the amendments listed above, claims 80-114 will be pending in the subject application.

1. **Rejections under 35 U.S.C. § 102(b)**

A. Egen

Claims 43-44, 46-55, 57, 58, 60-63, 65, 66, 68-71, 74-86, 88-91 and 93-96 have been rejected as being anticipated by U.S. Patent 5,336,387 to Egen *et al.* ("Egen"). According to the Examiner, Egen discloses Applicants' claimed methods and apparatus.

Applicants have canceled claims 43-79 without prejudice, thereby rendering moot the Examiner's rejection of claims 43-44, 46-55, 57, 58, 60-63, 65, 66, 68-71 and 74-79 as anticipated by Egen. Regarding pending claims 80-86, 88-91 and 93-96, Applicants respectfully disagree with the Examiner's assessment of the applicability of Egen to Applicants' claimed invention. As evidenced by the title of the his patent, Egen describes an electrical separator apparatus that may be used for isoelectric focusing or counter-flow gradient focusing. Electrodialysis is described by Egen as a purification technique also encompassed by his invention. All three of these described methods require continuous pumping of solvents through multichannel pumps (see, *e.g.,* column 9, lines 45-58; column 11, line 57 through column 12, line 9; and column 18, lines 41-53). The movement of the compounds to be separated by the Egen invention are therefore influenced to a great extent by pressure differentials between compartments contained within the Egen apparatus. The extreme application of this mechanism of separation can be found with Egen's counter-flow gradient focusing, which Egen describes as providing "a counter-flow gradient which counteracts the electrophoretic migration of the ions to be separated" (column 11, lines 50-55, emphasis added).

In contrast to the teaching of Egen, Applicants' claimed invention requires that substantially all transmembrane migration of the compounds to be separated is initiated by application of an electric potential. Unlike the invention taught and suggested by Egen, no pressure or fluid force is necessary in Applicants' invention to effect separation of compounds. Further, Egen does not teach or suggest a method for selectively removing a non-pathogenic biological contaminant from a mixture containing the

contaminant and a compound. Applicants' invention is therefore quite different from the invention described by Egan and as such, Applicants respectfully request that this rejection be withdrawn.

B. Laustsen

Claims 43-44, 46-58, 60-66, 68-72 and 74-96 are rejected as being anticipated by U.S. Patent 5,437,774 to Laustsen ("Laustsen"). According to the Examiner, Laustsen discloses Applicants' claimed methods and apparatus.

Applicants have canceled claims 43-79 without prejudice, thereby rendering moot the Examiner's rejection of claims 43-44, 46-58, 60-66, 68-72 and 74-79 as anticipated by Laustsen. Regarding pending claims 80-96, Applicants respectfully disagree with the Examiner's assessment of the applicability of Laustsen to Applicants' claimed invention. Laustsen teaches a method for separating high molecular weight compounds in solution (a load stream) from each other by using a combination of electric potential and differential pressure as a means for initiating the selective passage of one of the compounds through a separation membrane into a second solution (a dialysate) while the other of the compounds remains contained between the separation membrane and a retention membrane. The use of differential pressure as a separating-enhancing means appears in all of the Laustsen examples and reflects the general teaching in Laustsen that "migration of the molecular species to be separated is established by controlling electrical potential and differential pressure across the separation and retention membranes" (column 5, lines 47-52, emphasis added). In contrast, Applicants claim a method of separating a non-pathogenic biological contaminant from a mixture containing the contaminant and a compound across a membrane in which all substantial transmembrane migration of one of the two components is initiated solely by application of a current. No pressure or fluid force is necessary in Applicants' invention to effect separation of compounds.

Further, Laustsen teaches the use of charged (isoelectric) membranes as a means of enhancing separation of the described high molecular weight compounds (see, *e.g.*, the Experimental section and column 4, lines 3-18). In contrast to this teaching by Laustsen, Applicants' claimed invention relies on the application of an electric potential alone for substantially all transmembrane migration of the components to be separated. For at least these reasons, claims 80-96 are novel and unobvious over Laustsen. Applicants therefore request that the rejection of these claims be withdrawn.

2. Rejection under 35 U.S.C. § 103(a)

Claims 45, 59, 67, 73 and 97-114 have been rejected as being unpatentable over Laustsen in view of U.S. Patent 5,650,055 to Margolis ("Margolis"). The Examiner acknowledges that Laustsen does not teach reversal of polarity but cites Margolis as teaching this aspect of Applicants' claimed invention. Thus, according to the Examiner, it would have been obvious for one of ordinary skill in the art to implement the option of reversal of polarity as described by Margolis in the Laustsen teachings to arrive at Applicants' claimed invention.

Applicants have canceled claims 43-79 without prejudice, thereby rendering moot the Examiner's rejection of claims 45, 59, 67 and 73 as anticipated by Egen. Regarding pending claims 97-114, Applicants respectfully disagree with the Examiner's arguments of obviousness based on a combination of Laustsen and Margolis. As stated above in section 1B, Laustsen teaches the use of isoelectric membranes in his described apparatus. A person of ordinary skill would not be motivated to reverse the direction of electric field in such membranes with an expectation of achieving improved separation of components. Further, Margolis cannot remedy the deficiencies present in Laustsen, as discussed in section 1B above, that prevents Laustsen from anticipating or making obvious Applicants' claimed invention. For at least these reasons, this obviousness rejection of claims 97-114 should be withdrawn.

3. Conclusion

The foregoing amendments and remarks are being made to place the application in a condition for allowance. Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner find that an interview would be helpful to further prosecution of this application, he is invited to telephone the undersigned at his convenience.

Except for issue fees payable under 37 C.F.R. 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which my be required, including any required extension of time fees, or

to credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **Constructive Petition for Extension of Time** in accordance with 37 C.F.R. 1.136(a)(3).

Respectfully submitted
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